



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,195	07/18/2003	Ming-Chieh Lee	3382-66125	2663
26119	7590	12/18/2006	EXAMINER	
KLARQUIST SPARKMAN LLP			WONG, ALLEN C	
121 S.W. SALMON STREET			ART UNIT	
SUITE 1600			PAPER NUMBER	
PORTLAND, OR 97204			2621	

DATE MAILED: 12/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/623,195

Applicant(s)

LEE ET AL.

Examiner

Allen Wong

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/13/05
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____
- ☐ Notice of Informal Patent Application
- ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84; 32 USPQ2d at 1035.

Claims 16-22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 16 defines a *computer-readable program carrying medium having a computer-executable software* embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When

Art Unit: 2621

functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim a *computer-readable program carrying medium having a computer-executable software* to embody the program on "computer-readable medium" or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

The preamble needs to be rewritten as "a computer readable-medium encoded with a computer executable instructions for executing on a computer to decode a differential quantization coded video bit stream, comprising:".

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Altieri (6,104,751) in view of Jeong (5,657,087).

Regarding claim 1, Artieri discloses a method of differential quantization in video coding of a coded video bit stream, comprising:

analyzing motion vectors of macroblocks for a frame of a video sequence to estimate motion of the video at the frame in the video sequence (col.7, ln.10-21);

classifying regions of the frame according to perceptual significance based on the global motion estimate (col.8, ln.13-33; note regions of frame data is classified);

differentially quantizing the regions according to their perceptual significance classification in coding a compressed bit stream of the video sequence (fig.3, note element 12 is interactively connected by having input data from elements 10, 24 and 28 for controlling a quantization strength applied to the inverse quantizer 12);

signaling different quantization of the regions in the compressed bit stream, wherein the signaled different quantization includes signaling different quantization strength for macroblocks in a region on at least one boundary edge of the frame (fig.3, note element 12 is interactively connected by having input data from elements 10, 24 and 28 for controlling a quantization strength applied to the inverse quantizer 12);

reading the signaled different quantization from the compressed bit stream (fig.3, element 10 and col.7, ln.10-21); and

dequantizing the macroblocks of the frame according to the signaled different quantization (fig.3, element 12).

Artieri does not specifically disclose the term "global motion estimation".

However, Jeong teaches the application of global motion estimation (fig.3, Jeong discloses the global motion estimator for estimating global motion data, and fig.4B; Jeong discloses a global motion vector GMV for representing estimated global motion data). Therefore, it would have been obvious to one of ordinary skill in the art to

Art Unit: 2621

combine the teachings of Artieri and Jeong, as a whole, for accurately encoding/decoding video image data while maintaining high image quality (Jeong col.3, ln.11-17).

Note claims 2-7 have similar corresponding elements.

Regarding claims 8 and 16, Altieri discloses a video decoder comprising:

an inverse quantizer for dequantizing coded macroblocks of a frame in a video sequence encoded in a compressed video bit stream (fig.3, element 12);

a side information decoder for reading side information encoded apart from compressed video content in the compressed video bit stream according to a syntax scheme, wherein the side information includes information of differential quantization applied to macroblocks of the frame in regions (fig.3, element 10); and

a dequantization controller for controlling a quantization strength applied by the inverse quantizer in dequantizing individual macroblocks of the frame in accordance with the decoded side information of differential quantization of the respective macroblocks (fig.3, note element 12 is interactively connected by having input data from elements 10, 24 and 28 for controlling a quantization strength applied to the inverse quantizer 12).

Artieri does not specifically disclose the term "global motion estimation".

However, Jeong teaches the application of global motion estimation (fig.3, Jeong discloses the global motion estimator for estimating global motion data, and fig.4B, Jeong discloses a global motion vector GMV for representing estimated global motion data). Therefore, it would have been obvious to one of ordinary skill in the art to

Art Unit: 2621

combine the teachings of Artieri and Jeong, as a whole, for accurately encoding/decoding video image data while maintaining high image quality (Jeong col.3, ln.11-17).

Note claims 9-15 and 17-22 have similar corresponding elements.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Groody can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

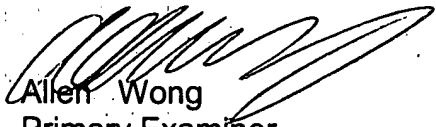
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Application/Control Number: 10/623,195

Page 7

Art Unit: 2621

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Allen Wong
Primary Examiner
Art Unit 2621

AW
12/11/06

Primary Examiner
Art Unit 2621